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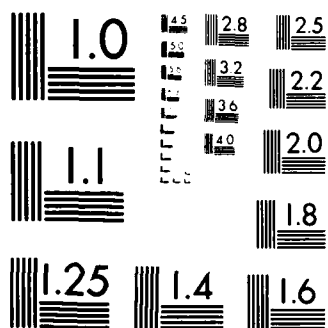
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1. Volume V of the Army Study Highlights Report presents the 5th set of Gists of five high quality studies recently selected for publication by members of the Army study community.
2. The report also contains a summary of lessons learned from peer reviews of a small sample of recent studies and a section on Review of Army Analysis Extended (RAAEX). The purpose of the study highlights reports has thus changed somewhat. In addition to its use as a way to widely publicize high quality studies, encourage excellence in Army analysis activities and give visibility to deserving individual analysts, the report will also inform the analysis community about matters of interest to that community. We appreciate your comments on the expanded role for the report as well as suggestions for items of interest for future editions.
3. Wide distribution should be made throughout your organizations. The selected studies are examples of efforts which will enhance the Army goals and missions. The lessons learned information is valuable to both analysts and sponsors. The RAAEX recommendations will have a far-reaching impact upon the future quality and conduct of studies and analysis in the Army.
4. Comments about the report and suggestions should be made to Ms. Gloria Brown of this office, at AV 227-0026 or (C) (202) 697-0026. Ms. Brown can also provide additional copies on request.

Joann H. Langston
JOANN H. LANGSTON, Director
Study Program Management Office
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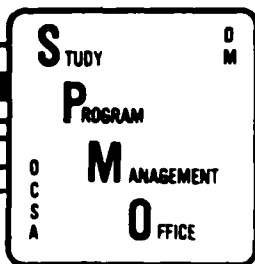


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USACE MOBILIZATION POSTURE

ONE SHEET
STUDY GIST

THE PRINCIPAL FINDINGS of this study were:

- (1) USACE does not provide adequate individual training in mobilization roles and missions.
- (2) Most USACE managers are unsure about how to remove construction constraints under emergency conditions.
- (3) Mobilization planning is not well coordinated among other Federal and non-Federal agencies, particularly at the regional level.
- (4) Mobilization staffing, material resources, and funding are not well provided for.
- (5) Mobilization requirements are not clearly defined.
- (6) The distinction between full and total mobilization is unclear.
- (7) The Direct Support/General Support District concept may be ineffective.
- (8) Existing and planned ADP systems are not designed to operate effectively under mobilization conditions.
- (9) Plans for maintaining the physical security of USACE facilities during a mobilization are inadequate.
- (10) There is a perception that USACE does not provide enough command emphasis and guidance for mobilization planning.

THE MAIN ASSUMPTIONS on which this study is based are:

- (1) In a national mobilization, USACE would be the primary agency expected to meet the construction and emergency response needs of the military and local governments.
- (2) The primary responsibility for USACE's mobilization support would fall to USACE's divisions and districts.
- (3) USACE is primarily structured for its peacetime role, not for a mobilization.

THE PRINCIPAL LIMITATIONS of this study which may affect the findings are: No mobilization exercise has tested USACE's ability to transition from full to total mobilization. Therefore, it has not been possible to assess the entire spectrum of requirements that could be levied against USACE FOAs during a

total mobilization, or the potential impact a total mobilization could have on USACE operations.

THE SCOPE OF THE STUDY. This study:

(1) Evaluates the current USACE mobilization posture for full and total mobilization.

(2) Outlines a conceptual mobilization posture for USACE, and identifies the principles and limitations which form the framework within which USACE must do mobilization planning.

(3) Presents a program that USACE should follow over the next 5 to 8 years to further improve its mobilization readiness posture.

THE STUDY OBJECTIVE.

The objective of this study was to develop a program USACE should follow to improve its posture for supporting full and total mobilization.

THE BASIC APPROACH.

(1) The study first evaluated USACE mobilization requirements and capabilities as assessed from MOBEX-78, 80, and 83 to determine the changes in the USACE mobilization posture over that time period.

(2) The study next outlined a conceptual framework for a mobilization posture that USACE should achieve if it is to effectively support either full or total mobilization. This conceptual framework was developed in consideration of the principles set forth by the national leaders, the Army Chiefs of Staff, and past and present Chiefs of Engineers. This conceptual mobilization posture was then suppressed, based on a number of "real world" limitations, to produce a "reasonably attainable" mobilization posture.

(3) Finally, the study sets forth a 5- to 8-year program for USACE to follow in enhancing its mobilization posture. The study provides two sets of recommendations: one set for USACE-wide implementation and a second set for HQ USACE implementation. Additionally, the study provides schedules for mobilization activities and the implementation of the study recommendations over the FY 84-90 period.

THE REASONS FOR PERFORMING THE STUDY.

MG E.R. Heiberg III, Deputy Commander, USACE, requested (in a 30 August 1982 DF) that ESC conduct a study evaluating USACE's performance during MOBEX-83, assess USACE's mobilization posture, and develop a mobilization improvement program for USACE.

DTIC ACCESSION NUMBERS OF THE FINAL REPORTS ARE B077451L, B079267L, AND B082221L.

COMMENTS AND QUESTIONS MAY BE SENT TO:

Engineer Studies Center
Casey Building 2594
Fort Belvoir, VA 22060-5583

POC: Mr. James Tate
AV: 345-2128



KOREAN PORTS AND TRANSPORTATION SYSTEMS CAPABILITY STUDY

VOLUME II

THE PORTS OF KOREA, PART 1 (U)



THE PRINCIPAL FINDINGS of the study are:

- (1) Ports designated for receiving military cargo should be rank ordered based on port vulnerability and operational, multiple vessel support system (VSS), and safety capabilities. Current OPLANs should be changed to reflect this rank order.
- (2) Korean ports have excellent berthing capabilities for most vessels in the MSC-controlled fleet, NDRF and RRF. However, most ports lack stern-ramp RORO facilities and truck and rail end-loading ramps for expedient intramodal transfer.
- (3) Many key ports in existing OPLANs are capable of handling military cargo, but lack rail service to their facilities. Since most rail service terminates at locations other than the port complexes, multiple handling of cargo will be required.
- (4) Privately owned ports in Korea have some of the best facilities for accommodating typical US-flag fleet ships carrying military cargo.
- (5) Implementation of the recommendations made in this study will improve the transportation supportability of the Korean contingency CINCPAC OPLAN.

THE MAIN ASSUMPTIONS of this study are:

- (1) A combination of typical US-flag and Korean-flag vessel characteristics, by type vessel, is an adequate basis for determining berthing capabilities.
- (2) A combination of port vulnerability, ideal berth factors; and operational, safety, and multiple VSS capabilities is an adequate basis for determining the adequacy of a port for handling military cargo.

THE PRINCIPAL LIMITATIONS of this study are:

- (1) Information on material handling equipment, channel and pierside drafts, supplied by the Korean Maritime and Port Administration District Offices, could not be verified by project personnel.
- (2) Port development projects may not be funded and constructed as planned.

THE SCOPE OF THE STUDY is as follows:

- (1) On-site surveys of 22 ports throughout Korea.
- (2) Development of an individual berth rank-ordering scheme for breakbulk, RORO, container, and barge operations.
- (3) Development of an overall port rank-ordering procedure based on the capability of the ports to handle unit equipment, general resupply, or ammunition type cargo individually or jointly.

(4) Comparison of US-flag and Korean-flag ship characteristics and requirements with the berthing characteristics and capabilities of each surveyed port.

(5) Development of specific plans that US and Korean military and government officials should undertake to offset shortfalls in the transportation feasibility of the OPLAN.

THE STUDY OBJECTIVES were to:

(1) Provide an up-to-date, easily used reference of Korean port characteristics for discharging typical military cargo.

(2) Establish a priority listing of ports, by operation type, best suited for deployment and resupply requirements.

(3) Identify ports and berths suitable for use as alternatives.

THE BASIC APPROACH: Data on Korean ports were taken from all available sources and also during onsite surveys. These data were then compared, and needed changes were made. The data were organized into a standard format. Ports were ranked by commodity type based on the newly developed individual berth and port rank-ordering schemes. Shortfalls in port clearance capabilities were identified. Recommendations were made for sustaining military cargo discharge and clearance operations during hostilities against South Korea.

REASONS FOR PERFORMING THE STUDY:

In December 1982, the commander, MTMC Terminal, Pusan, requested that MTMC TEA conduct a study of Korean ports to determine safe alternative locations to discharging ammunition. During the Phase 1 OPLAN Refinement Conference at the Joint Deployment Agency, in January 1983, other significant transportation shortfalls were identified; the main one was lack of container reception capability. In March 1983, the J4 EUSA/USFK, requested that MTMC TEA conduct an overall origin-destination analysis of the logistic pipeline that would be support Korea during hostilities. Volume II, The Ports of Korea, Part 1, of the Korean Ports and Transportation Systems Capability Study fulfills these requirements. No comparable study presently exists.

DTIC ACCESSION NUMBER OF THE FINAL REPORT: B082657

STUDY SPONSORS:

EUSA/USFK, CINCPAC,
J4-OJCS, JDA and JDSSC

COMMENTS AND QUESTIONS may be sent to:


Military Traffic Management Command
Transportation Engineering Agency
ATTN: MTT-TEP (Mr. Cooper)
PO Box 6276
Newport News, VA 23606-0276

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PERFORMING ORGANIZATION AND AUTHORS:

Military Traffic Management Command
Transportation Engineering Agency
William J. Cooper
Allen L. Snyder, P.E.
John McClaire, CPT, TC

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	RESOURCE CONSTRAINED PROCUREMENT OBJECTIVES FOR MUNITIONS (RECPOM) STUDY (U)	ONE SHEET STUDY GIST CAA-SR-84-7
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(U) THE PRINCIPAL FINDINGS of the work reported herein are as follows:

(1) (U) Based on the validation comparison with P88-Europe results and the demonstration and sensitivity results, the RECPOM Model produces logical responses to realistic and varied program and budget changes, thus adequately representing a sound decisionmaking process.

(2) (U) The RECPOM Model can provide a cost effective mix, allocation and production schedule for up to 40 munitions and 22 requirement priorities when changes occur in funding, priority, production rates, or distribution of existing stockpiles as well as when munition tradeoffs are being considered.

(3) (U) A typical response time to queries not requiring model restructuring or major data base changes is less than 2 weeks.

(4) (U) The RECPOM Model cannot currently accept manual munition allocation, vary munition average unit cost with changes in production quantity, or reconcile the effects of not killing all required enemy targets.

(U) THE MAIN ASSUMPTIONS on which the work reported herein rests are as follows:

(1) (U) The Army will continue to require more munitions than it can afford.

(2) (U) The nature of the Planning, Programing, Budgeting and Execution System (PPBES) process will continue to require numerous conditional examinations of alternative munition procurements with limited time available for substantial analysis.

(U) THE PRINCIPAL LIMITATIONS of this work which may affect the findings are as follows:

(1) (U) Munition transportation and storage constraints are not addressed.

(2) (U) The impact of funding and other resource changes is oriented toward POM development and analysis and thus is shown relative to the program force only.

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(3) (U) For the demonstration phase, a selected set of high-dollar, high-visibility munitions has been considered representative of Army munitions over the FY 84-88 program period.

(U) THE SCOPE OF THE STUDY was taken to include that the methodology developed be sufficiently flexible to address program or budget issues and that it be suitable for quick turnaround analysis.

(U) THE STUDY OBJECTIVES were:

(1) (U) To develop a methodology for determining within constrained funding and production levels the most effective mix and quantity of conventional munitions to support the total Army worldwide requirement.

(2) (U) To demonstrate the methodology for assumed constrained funding levels using data from the P88 Europe Study as a baseline.

(U) THE BASIC APPROACH followed in doing this study can be described as follows: A set of war reserve, training, and test munition goals is prioritized consistent with Army force packaging priorities and established munition requirements. The methodology centers around a goal program allocation model which satisfies the prioritized goals considering munition unit cost and consistent with program-budget fund limitations and munition production capacity.

(U) THE REASONS FOR PERFORMING THE STUDY are mainly as follows: This study responds to a need for an expeditious method to aid in munition allocation decisions and an assessment of their impact because of frequently changing priority and funding guidance during the PPBES cycle.

(U) THE STUDY SPONSOR was the Deputy Chief of Staff for Operations and Plans who sponsored the work, established the objectives, and monitored study activities.

(U) THE STUDY EFFORT was directed by Mr. Ronald J. Iekel, Requirements and Resources Directorate, CAA.

(U) COMMENTS AND QUESTIONS may be sent to the Assistant Director for Requirements and Resources, US Army Concepts Analysis Agency, 8120 Woodmont Avenue, Bethesda, MD 20814, AUTOVON 295-5251.

DTIC number C034682.

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U.S. ARMY MATERIEL SYSTEMS ANALYSIS ACTIVITY



SOURCES AND IMPACTS OF INSTABILITY IN WEAPON SYSTEMS ACQUISITION

1. BACKGROUND AND PROBLEM STATEMENT: Two high level Army task forces (the Acquisition Steering Group and the Cost Discipline Advisory Committee) concluded that program instability is a major cause of both cost and schedule growth. This view was corroborated by our survey of project managers, who identified requirements, funding, technological and personnel instabilities as significant impediments to program success. Subsequent research focused on ways to better manage these four instability types.

2. OBJECTIVES: The objectives of this study were to (i) identify instability factors which affect Army programs; (ii) isolate instability factors which the Army can control; (iii) analyze the impact of each Army-controllable instability factor; (iv) assess proper balance of stability and flexibility; (v) determine the source of each Army-controllable, undesirable instability factor; (vi) examine current stabilization initiatives; and (vii) recommend new or revised initiatives to attain the proper stability/flexibility balance.

3. RESEARCH DESIGN: Research efforts consisted of (i) an in-depth literature review; (ii) a survey of past and present project managers; (iii) an analysis of current initiatives; (iv) interviews with Army resource and acquisition management personnel; and (v) synthesis of results.

4. CONCLUSIONS: (i) instability pervades the Army's acquisition and resource management processes and is most pronounced in requirements, technology, funding and personnel practices; (ii) the Army, itself, is a key contributor to program instability; (iii) current procedural initiatives address some, but not all, of the project managers' concerns; and (iv) more basic reforms will be needed to effect the proper stability/flexibility balance.

5. RECOMMENDATIONS: A threefold approach to program stabilization is recommended: (i) introduction of matrix management for the Army General Staff to provide better mission focus and functional integration; (ii) review of personnel practices to include staffing, promotion and rotation policies; (iii) tenacious implementation of current initiatives with emphasis on problems surfaced by our survey and expanded use of multiyear procurement.

6. COMMENTS AND QUESTIONS MAY BE SENT TO: Mr. Duane Knittle or Mr. Charles Smith, US Army Procurement Research Office, Army Materiel Systems Analysis Activity, Fort Lee, VA 23801-6046 AUTOVON 687-4381

7. STUDY SPONSOR: DA, Office of the Comptroller of the Army, DACA-CAZ-A.

8. STUDY EFFORT WAS DIRECTED BY: HQ, DARCOM, DRCP-P-S.

9. DTIC ACCESSION NUMBER OF FINAL DD1498: DA301430.



THE INTERNATIONAL ECONOMIC, READINESS,
AND LOGISTIC SUPPORT COST
MODEL: CONUS VS OCONUS SITES FOR
DEPOT LEVEL MAINTENANCE
(COST COMPARISON MODEL)

ONE SHEET
STUDY GIST

THE PRINCIPAL FINDINGS

(1) The net costs to the U.S. Government of performing depot maintenance (and therefore many other military functions) at CONUS sites versus OCONUS sites is significantly less than many previous studies have shown.

(2) The primary factor in determining if it is cost effective to overhaul an item in CONUS vs OCONUS is manhours per item required divided by measurement tons (shipping cubic feet/40) per item.

(3) Other major factors are the DM/\$1 exchange rate, the total U. S. tax rate, the additional facilities and equipment costs, and annual replacement pipeline costs.

THE MAIN ASSUMPTIONS

(1) CONUS workers pay local, state and federal U. S. taxes while foreign workers at OCONUS sites do not.

(2) Each new or additional CONUS job creates other CONUS support jobs which also pay U. S. taxes.

(3) Some, but not nearly all, of the new CONUS jobs would be filled by people currently drawing unemployment and/or welfare benefits.

THE PRINCIPAL LIMITATIONS

(1) Limited data is available on the percentage of people hired for depot type jobs who would be drawing each type of unemployment and/or welfare benefits.

(2) Limited data is available on how additional CONUS jobs would increase indirect taxes, such as amusement, airlines, liquor, business, etc.

SCOPE OF THE STUDY

The scope of the study was to develop a model to accurately compare the cost of performing depot level maintenance in the U. S. versus Europe.

STUDY OBJECTIVES

- (1) Review CONUS vs OCONUS cost comparison models in existence.
- (2) Improve these models as needed.
- (3) Especially consider the impacts of CONUS jobs.

THE BASIC APPROACH

This model sums the present value of 10 years of net maintenance labor costs, net packing and transportation costs, net additional facility equipment, and training costs, and net increased pipeline costs to maintain the same level of readiness for each alternate site. The net cost is the actual estimated cost minus the federal, state, and local income taxes and the reduction in unemployment and welfare costs resulting from the direct and indirect jobs resulting from this expenditure. The Construction Engineering Research Lab economic models were used with the Department of Commerce U. S. input-output data to provide employment and income multipliers as well as income and employment factors per \$1,000,000 of expenditures for several major business sectors.

REASON FOR PERFORMING THE STUDY

General Thompson, Commander, AMC, asked for such a study/model when he was the DCSLOG.

STUDY SPONSOR

General Thompson, Commander, AMC, asked for such a study/model when he was the DCSLOG.

STUDY EFFORT

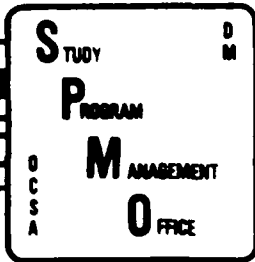
Principal Investigator:

Carl L. Barton
DESCOM Systems Analysis and Evaluation Office

COMMENTS AND QUESTIONS

US Army Depot System Command
Systems Analysis and Evaluation Office
AMSDS-X
AV 238-7232/6487

DTIC ACCESSION NUMBER OF FINAL REPORT (DA 304554)



LESSONS LEARNED FROM RECENT PEER REVIEWS

LESSONS LEARNED FROM RECENT PEER REVIEWS

INTRODUCTION

The Deputy Under Secretary of the Army for Operations Research has been conducting peer reviews of selected completed studies over the past two years. Although only a few studies and study agencies have been reviewed, some trends are clear. The lessons learned are presented to assist study sponsors and study performers in their search for ways to improve the quality of studies. Comments on the lessons learned should be forwarded to the Study Program Management Office for further sharing among members of the study community.

LESSONS LEARNED

The frequency of errors, inconsistencies, inadequacy of explanation, omission of apparently important factors, and poor presentation indicates a need to establish or improve pre-publication internal reviews. A majority of studies reviewed had significant shortfalls of the kind that could have been caught by a reasonable internal "murder board" process. Possible reasons for the shortfalls are: lack of a study advisory group, lapse of time between study completion and report publication, perception that the report is just "for the record," interruptions in the study, and failure to consider audiences other than the sponsor.

A majority of the reviewed studies had difficulties because of unclear purposes or objectives, or at least lack of agreed understanding of the objectives. The problem was aggravated in one case by involvement of several command levels, each with a different view, which resulted in an infeasible scope of work within the planned schedule. In another case, the study group apparently interpreted the problem quite differently than did the sponsor, resulting in an almost useless product. Another study group used an inappropriate method which may have been due to very broad process-type objectives rather than results-type objectives.

All reviewed studies had serious problems of validity of results because of small sample sizes, lack of sensitivity analyses and failure to estimate confidence ranges. These problems occur particularly when gaming or simulation efforts are involved, where often only one scenario or one iteration of a game is played. The problem of validity is almost always present in situations where broad suggestive analyses are preferred to narrower definitive analyses.

A majority of the reviewed studies had problems relating methods of solution to the studies' objectives. In some cases, the selected measures of effectiveness were either not defined or not logically related to the objectives, leading to doubts about the validity of the conclusions. In one case, the method seemed incapable of measuring factors essential to the objectives,

causing a credibility problem. This type of shortcoming is related to that of validity in that problems with both are caused by trying to do as much as possible within limited time using whatever methods available.

Reviewed studies involving cost analysis were judged to be shallow in respect to the cost analysis, even though costs were key to the studies. The consequence was to undermine the credibility of the results. A possible reason for the shallowness was the orientation of the studies towards filling requirements, when cost appears to be of secondary importance, rather than towards helping with allocation decisions, which is a more desirable orientation.

A majority of the studies showed incomplete integration of substudies into coherent analyses. This was demonstrated principally by inconsistencies between annexes and the body of reports. In some cases, the actual analyses, consisting of simulations at different levels, appeared to be independent and partly conflicting. As with the methods problem above, this problem seems to be a result of trying to tackle too big a problem with convenient, but not necessarily appropriate, tools.

Three other lessons of particular importance came from the reviews. First, one study was rendered almost useless because the study group failed to consider the changing nature of the requirements that were driving the study. Although consideration of change might be assumed as normal for a good study group, it cannot be taken for granted. The second special lesson is that of a sponsor who wrote an executive summary which was inconsistent with the body of the report. The sponsor also apparently modified the study's caveats concerning implementation of the results. Readers are thus not only confused, but also have their confidence in the results destroyed. Finally, a sponsor made a commitment to provide documentation which, in fact, was not available to allow the study to proceed on schedule. Such events almost completely undermine the Army's positions on contracts and often cause serious loss of time and professional staff effort on in-house studies.

COMMENT

It is important to recognize that the peer review process is designed to deliberately tease out difficulties and problems related to study accomplishment so that the study community learns from the mistakes. The overall objective is the improvement of the quality of studies. Thus, although many examples of problems are identified here, a balanced perspective must be maintained. Study performers and sponsors are to be commended for what they do. The studies highlighted in the preceding pages exemplify what is good about the study program.

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REVIEW OF ARMY ANALYSIS EXTENDED (RAAEX)

REVIEW OF ARMY ANALYSIS EXTENDED (RAAEX)

The purpose of the Review of Army Analysis Extended (RAAEX) was to improve the contribution made by analysis in illuminating and solving issues and problems of interest to the Army. This review was, in a sense, an extension of the 1978 Review of Army Analysis. The overall task was to assess the Army's current analysis system and its uses and to propose improvements in policy, procedure, programs and organizations. In general, the group sought improvements that could be achieved by better management practices and by exploiting state-of-the-art technology in telecommunications and automated data processing.

The RAAEX study team was co-chaired by the Deputy Under Secretary of the Army (Operations Research) and the Technical Advisor to the Deputy Chief of Staff for Operations and Plans. The remainder of the study group comprised representatives of those elements of the HQDA, DA FOA, AMC AND TRADOC that are involved directly in Army studies and analyses or which routinely employ operations research techniques in support of their work. The initial RAAEX meeting was on 9 July and reports were completed on 31 August 1984.

The work of the RAAEX study team addressed seven basic study objectives.

- The first was to clarify definitions of studies and analyses and provide for appropriate management of them.
- The second study objective was to assess the extent to which the actions taken as a consequence of the 1978 Review of Army Analysis have benefitted the Army.
- The remaining five objectives concern identification of appropriate actions to improve the following:
 - Problems Selected for Study and Analysis - The Army analysis community should work mainly on problems whose solutions would be of high benefit to the Army.
 - Quality of Work - Army analyses should be pertinent, consistent, valid, and credible.
 - Productivity - Army analyses should be efficiently conducted and resources should be adequate.
 - Organizational Arrangements - The Army analysis community should be organized to facilitate efficient conduct of an integrated program of studies, to provide proper guidance and control of studies and analyses, to encourage coordination of related study activities and to minimize analysis gaps and needless overlaps.
 - Support to Army in the Field - The Army analysis community should provide support to the functions of training, planning and operations.

From the study objectives, sixteen specific tasks were developed and assigned. Individual reports were reviewed in-process; final reports contained findings and recommendations. From these, nearly 100 RAAEX recommendations emerged. They can be arranged logically into five broad groups.

- Study Program Management - Clarify definitions of study and analysis with provisions for appropriate degrees of management, improve ability to define major Army issues and achieve better program balance.
- Study and Model Integration - Develop a top down driven Army-wide Mission Area Analysis process to provide greater horizontal and vertical integration of force and combat developments. Reaffirm commitment to the hierarchy of models and the Army Model Improvement Program.
- Quality of Analysis - Improve policy and procedures for assuring quality of Army analysis, emphasize analysis research efforts to provide for growth in future capability, and improve management of the professional development of military and civilian operations research analysts.
- Functional Support - Increase analysis support to the Army in the field, increase capability for conducting analysis of manpower and personnel issues and logistic issues.
- Analysis Interfaces - Increase interaction with analysis activities external to the Army, increase integration of testing and analysis, strengthen interface between cost analysis and other Army analysis, and improve procedures for providing essential vulnerability and lethality input data.

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